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ABSTRACT

The first Earth Day was held on April 22, 1970. This monograph is an attempt to analyze the environmental improvement efforts since that time, with emphasis on environmental education and environmental studies. It is claimed that environmental policies developed over the past 17 years have failed to incorporate adequately the human dimension in relationships between people and their environment. Environmental education and environmental studies programs not only have failed to address cultural or human ecology substantively, but have evolved in a manner largely isolated from both the teacher education curricular mainstream and the humanities and science disciplines. Environmental educators are challenged to get on the "cutting edge" of the scholarly and education mainstream. (TW)

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Earth Day and Environmental Education: Retrospect and Prospect

William G. Berberet

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IES Monograph 1

Institute for Environmental Studies

University of Wisconsin-Madison

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Earth Day and Environmental Education: Retrospect and Prospect

William G. Berberet

It has been 17 years since the first Earth Day, April 22, 1970. Hundreds of thousands, if not millions, of people turned out all over America that day to demonstrate on behalf of Earth cleanup. That was a time of tremendous political ferment and unrest, one of those rare periods in American history when the popular impulse for reform truly cut across age, class, gender, and race lines. The immediate context, of course, featured popular reaction to events such as the student massacre at Kent State University and the American invasion of Cambodia as well as regular revelations of alarming levels of environmental degradation. Antiwar, antidiscrimination, and antipollution sentiments coalesced in demonstrations of mass protest, of which Earth Day, April 22, 1970, was a culminating expression on behalf of the biosphere.

On a popular level, the problems and solutions on Earth Day, 1970, were straightforward. Environmentally, waste and pollution were the immediate problems; recycling and cleanup were the obvious solutions. The popular analysis was simple, as suggested by a wag of the time: "I shot an arrow in the air -- and it stuck!" But lurking ominously in the background, technology and big business were seen as contributing most to environmental problems; curbing corporate power and passing government antipollution regulations were necessary political solutions. The reformist appeal was moralistic in the American democratic tradition. The battle to save the environment was portrayed as a struggle between the virtuous people -- the largely innocent majority -- and a selfish business minority. Through the power of technology and corporate control of a rapacious industrial economy this villainous minority sustained a military-industrial complex that degraded the environment, waged the Vietnam War, and kept women and minorities in subservient status.

Thus, in the popular consciousness, the battle of the first Earth Day was between ecology and economy, between environmental protection and economic development. And, indeed, the Earth Day era produced landmark federal, state, and local environmental legislation and established a governmental bureaucracy for environmental protection. Air and water quality control, hazardous waste management, the President's Council on Environmental Quality, and the U.S. Environmental Protection Agency are legacies of the period. Perhaps most significant, the National Environmental Policy Act established the environmental impact assessment process, a procedure to evaluate the environmental effects of proposed development projects that has become institutionalized over the years and serves as a model for other nations.

In light of these early successes, what has been the environmental protection record over 17 intervening years? One might be justified in inferring a bright future from a seemingly solid foundation in the late 1960s to early 1970s. Yet, the most cursory examination of the present scene confirms that things have not turned out happily. Prospects for the long-term sustenance of the Earth may never have seemed so bleak. Enormous and worsening environmental problems beset us on all sides: acid rain, deforestation, toxic wastes, topsoil loss, desertification, soil salinity, and recently, renewed concerns about the so-called greenhouse effect. In spite of occasional signs to the contrary, the environmental movement of the original Earth Day era seems dead or at least dormant. Economic growth, consumer materialism, and self-centered, yuppie values seem to be the order of the day. Only public opinion polls consistently suggest that the

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environmental values of the 1960s and 1970s have been internalized by a majority of the American public (Conservation Foundation 1987, pp. 5,7-8).

What happened? How could a popular movement of near-crusade proportions and seemingly enduring political reform have accomplished so little for the long-term well-being of the Earth? How was the ecological consciousness of the early 1970s replaced with the apparently rampant entrepreneurial materialism of Ronald Reagan's 1980s? My purpose is to explore these questions in terms of environmental studies, education, and policy and the failure of each to develop a critical cultural content. Lacking this cultural content, environmental policies have failed to incorporate adequately the human dimension in relationships between people and the environment. Environmental studies and environmental education programs not only have failed to address cultural or human ecology substantively but have evolved in a manner largely isolated from both the teacher-education curricular mainstream and the humanities and sciences disciplines. As a result, environmental studies and environmental education have yet to establish themselves on firm ground intellectually and to gain positions of sufficient enduring significance in the academic and political mainstreams.

This current state of affairs is indeed unfortunate. Fifteen years ago the future seemed bright for holistic, multidisciplinary approaches to environmental problems, including the development of a sophisticated scholarship integrating natural and human systems. Today, however, the disciplines reign supreme, and numerous environmental studies and environmental education programs have gone by the wayside.

It is worthwhile to recall some of the works and events of the 1960s and early 1970s that seemed to herald a bright future for holistic environmental scholarship. By the mid-1960s, only a few years after Rachel Carson's *Silent Spring* gave birth to the modern environmental movement, Kenneth Boulding and Barbara Ward had begun to popularize a global ecosystems paradigm through the analogy of "Spaceship Earth" (Boulding, Ward 1966). Garrett Hardin's brilliant 1968 essay, "Tragedy of the Commons," demonstrated the inconsistencies of well-meaning public policies for environmental protection and self-interested human behavior. In 1969, Ian McHarg's *Design With Nature* articulated a far-sighted ecological methodology for land use planning, an approach made compelling in the film, *Multiply and Subdue the Earth.* Lynton Keith Caldwell followed in 1971 with *Environment: A Challenge to Modern Society,* a comprehensive analysis of the natural and human dimensions of environmental policy from a Spaceship Earth ecological perspective.

The Club of Rome's *Limits to Growth* study in 1972 (Meadows et al.) unveiled a global model postulating disastrous effects from exponential world growth in population, industrialization, pollution, and resource depletion and from inadequate food production. The 1972 Stockholm Conference on the Human Environment brought the highly industrialized and developing third worlds into a dialogue on global environmental policy. Heeding Indira Gandhi's admonition (1972, p. 36) that "poverty and need are the greatest polluters," the conference articulated a new notion, "ecologically sustainable development," as a goal designed to reconcile the need for both economic development and environmental protection (Caldwell 1984, pp. 67-68, 175-76). E.F. Schumacher further acknowledged the necessity to incorporate the human cultural dimension internationally in his seminal 1973 work, *Small is Beautiful: Economics as if People Mattered.* Schumacher advocated the use of technology appropriate to human economic, cultural, and environmental circumstances. For the developing nations he urged the adoption of intermediate technologies in keeping with their limited capital, abundant labor, and fragile environments, rather than the wasteful energy-, capital-, and resource-intensive technologies of the highly industrialized countries.

Noel McInnis and Ian Barbour round out a review of representative thinkers who laid a thoughtful and promising foundation for this new field of interdisciplinary scholarship. Barbour's 1973 reader, *Western Man and Environmental Ethics,* served for a decade as a basic primer. McInnis' little book, *You Are an Environment* (1972), linked people and the environment inextricably, rendering inescapable Pogo's quip, "We have met the enemy, and they is us."

Paralleling the evolution of a multidisciplinary environmental content, environmental education (EE) emerged during the late 1960s, an admixture of science, conservation, and outdoor education infused with

the new ecological consciousness. Environmental education programs developed in both the formal school setting and nonformal programs in parks and nature centers. From the beginning, environmental education programs professed the aims, to cite Robert Roth and William Stapp, of "producing a citizenry that is knowledgeable about the biophysical and sociocultural environments of which man is a part, aware of environmental problems and management alternatives of use in solving these problems, and motivated to act responsibly in developing diverse environments that are optimal for living a quality life" (ERIC/SMEAC No. 3, 1986). Thus, by definition, early EE was intended to cultivate awareness of culture-environment relationships, assist in environmental problem-solving, and contribute to use of environments for quality-of-life purposes. By the early 1970s, environmental education rode such a crest of popularity that nearly every K-12 school had an EE program, and every college worth its salt had developed some sort of environmental studies curriculum. Most communities offered nonformal EE programs of some sort, not to mention a proliferation of print and electronic media presentations on environmental topics.

After such a seemingly positive beginning, the inability of the new environmental scholarship and environmental education to fulfill its potential bears scrutiny. The late 1960s-early 1970s period spawned almost unprecedented involvement of leading scholarly voices from the campus as political activists in the environmental movement -- Paul Ehrlich, Barry Commoner, Rene Dubos, and Kenneth Boulding, to name a few. The list is long. When the environmental movement assumed center stage in American politics, allying at points with the anti-Vietnam War and civil rights movements, professors as never before or since became national figures, hyped by the media and recognized and admired by millions of people at home and abroad. This merging of professorial and political roles blurred traditional distinctions between scholar and activist and contributed to the hardening of a new field into political ideology at its very birth, a field so new that it had achieved neither a universally agreed name nor more than the outlines of theoretical substance.

As political ideology, environmentalism portrayed clearly the good guys and the bad guys, appealing to America's long tradition of depicting political reform as a moralistic struggle between the virtuous people and villainous business interests. This tactic, aided by a receptive political climate featuring as well the civil rights, feminist, and antiwar movements, resulted in passage of the nation's most impressive body of federal and state legislation in history to protect the environment.

Unfortunately for the intellectual development of the new environmental field, what worked in the political arena also worked, at least for a time, in the classroom and with book publishers. Most students learned a holistic environmental ideology composed of cliche-ridden principles allegedly governing nature's relationships between humans and the environment, to wit: "There is no such thing as a free lunch," "the ideal state is a steady state," "diversity breeds stability," "exceeding a habitat's carrying capacity is the straw that breaks the camel's back." My point is not to discredit the value of these popular theoretical generalizations but to argue that they became articles of a kind of environmental fundamentalism, a zealous faith that distracted attention from the spirit of open-ended inquiry and commitment to basic research necessary to establish the credibility of a new scholarly field.

Consequently, with notable exceptions, environmental studies has failed to gain the respect of scholars in traditional disciplines, and environmental education has become isolated from both scholars and other professional educators. Some of this, of course, is traditional discipline snobbery and turf-consciousness as well as the politics of where educational resources are allocated. My central contention, however, is that the thin intellectual substance of this fledgling environmental field proved fatal after the public wearied of the environmental political movement and the recession of the early 1980s brought cutbacks in funding for education. Lacking scholarly clout and political support, many environmental programs declined or disappeared to the tune of the ascendancy of Ronald Reagan, James Watt, and Anne Burford (Berberet 1987, p. 47).

These remarks are not intended to indict environmental education but rather to suggest that the politicization of EE during its infancy locked it into a kind of ideological time warp. With its content ideologically predetermined, the need for EE to raise questions and engage in continuing inquiry withered. Consequently, EE's appeal remained and continues to remain primarily with children, among whom EE is

responsible for instilling a sensitivity to nature. This, function, I would hasten to add, is critical to the positive value formation that must undergird environmental stewardship at a time when electronic technologies often distort and depersonalize contact with nature.

The most serious shortcomings of EE may well lie at the secondary and college levels, where systematic study of cultures within environmental contexts seems lacking and where habits of integrative thinking have been inadequately infused into the humanities, natural sciences, and social science disciplines. It is an unfair oversimplification to say that environmental educators stress only negative, antieconomic stances that portray the pastoral serenity of a Constable painting or the pristine wilderness of Muir's Yosemite as humankind's ideal relationship with nature. Yet, EE must acquire facts as well as philosophy, a weighing of well-crafted alternatives as well as simplistic conclusions and calls to action.

In 1982, at the 10th anniversary ceremony of the Stockholm conference, Mustafa Tolba, director of the United Nations Environment Programme, declared that environmental educators had learned much since 1972, but little of this knowledge had influenced decisionmakers. Thus, according to Tolba (1982), little had been accomplished in the political arena to address Mrs. Gandhi's 1972 admonition regarding poverty and pollution. The hardening of ecological philosophy into eco-ideology produced a rigidity that both diminished the effectiveness of efforts to influence decisionmakers through education and limited meaningful consideration of cultural perspectives.

The case for incorporating cultural studies as a necessary component of environmental education rests on the assumption that the discipline of biology alone is inadequate to explain human ecology and behavior, that there is a powerful social and cultural basis for relationships of the human species with the environment. Unlike the relative predictability of flora and fauna, human self-consciousness and cognition allow for myriad behavioral responses to a given ecological situation. These behaviors reflect individual differences in values, beliefs, habits, motivation, and judgment as well as culture-specific influences -- political, economic, social, religious, philosophical, artistic -- in the relationships between the individual and the larger society. Although environmental influences are reflected in a particular culture's degree of environmental sensitivity and in the extent to which factors ranging from religion to technology foster attitudes of dominion over nature, environmental influences are only one determinant of a culture's specific characteristics.

According to anthropologist John Bennett (1976), cultural ecology at heart is the systematic study of how person-person relations modify person-nature relations and how the results affect the future of both sets of relationships. Unless we understand better the driving forces behind people-people relations, we will be hard put to develop environmental policy that responds well to human wants, needs, and sources of satisfaction. Some level of agreement between policy and perception is necessary for policy enforceability but also for long-term public identification with the purposes and rationales for policies. The rationale for environmental policies of the 1960s and 1970s largely ignored people-people relationships in stressing protection of the environment from degradation at the hands of people. Consequently, when the antibusiness environmental appeal ran out of steam by the end of the 1970s, no comprehensive cultural perspectives stood in the wings waiting to fill the void. This experience suggests the difficulty of sustaining an environmental policy whose rationale inadequately incorporates economic activity and economic interests as fundamental players in the people-people, people-environment equation and the goal of what architect Wolfgang Preiser (Borden 1986, pp. 45-53) calls "habitability" in human relationships with nature.

One of the intellectual failures of environmental education during the 1970s was the inability to articulate a compelling cultural vision emphasizing fulfillment of human wants, needs, and sources of satisfaction through nonmaterialistic personal and people-people activities. As Bennett puts it (1976, p. 311), "The overriding problem of ecological reform is the need to provide psychologically gratifying and economically rewarding activities that substitute for those presently causing environmental degradation and pollution."

We might have learned a great deal from the 1960s-1970s counterculture about matters ranging from diet and child-rearing to lifestyles and community living. But for the most part, the counterculture was

spurned by both the middle-class base of the environmental movement and by scholars, with the exception of a few authors such as Theodore Roszak. The anti-intellectual tendencies of counterculture adherents, their experimentation with drugs and sex, and their inclination to withdraw from the mainstream to pursue utopian living experiments did little to endear them to the majority. Although it is understandable that a 1970s generation turned away from cultural idealism in the wake of Vietnam, Watergate, and the energy crisis, the self-centered, me-first, yuppie materialism of the 1980s testifies to the magnitude of a lost cultural opportunity.

In spite of Mustafa Tolba's pessimistic 1982 assessment of EE's effectiveness, several developments in recent years offer some room for optimism about the future. First, although the United Nations EE conferences in Belgrade, Yugoslavia, in 1975 and Tbilisi, Soviet Union, in 1977 seem to have had minimal impact in the United States, both gatherings affirmed the need to consider economic and cultural development as well as environmental protection in environmental education. The declaration and recommendations of the Tbilisi conference emphasized quality of life as well as environmental quality by linking environmental and developmental concerns worldwide. They also advocated increased use of research findings from other fields to upgrade EE content, expanded regional and international cooperation in environmental education, and determination of the role environmental education could play in the renewal of education in general (Jeske 1978).

The 1977 Tbilisi conference addressed most of the concerns about environmental education that I have expressed, including the vision that EE can contribute to the reform of education in general by fostering an ecological world view, critical inquiry regarding nonmaterialistic values and lifestyles, and reasoning skills from the perspective of environmental ethics. In the United States, the Alliance for Environmental Education, a loose coalition of some 30 EE organizations, attempted to foster implementation of the Tbilisi recommendations at 1978 and 1983 national congresses. Little appears to have been accomplished, partially because of the absence of well-established structures for EE networking in the United States. Perhaps more important, however, is the absence of an office or center for environmental education at the federal government level and the weak association of the United States with the UNESCO-UNEP international structure. National and international collaboration is seriously weakened when funding comes almost entirely from state, local, and private sources.

Yet regional and global efforts are being made to establish an international EE structure and to promote ecologically sustainable development. Founded in 1983 as an international network of EE organizations, the International Society for Environmental Education (ISEE) has helped organize regional workshops in Asia, Australia, and North America to foster continental EE networks and to help UNESCO-UNEP establish connections with individual educators. A 1985 conference in New Delhi cosponsored by ISEE, the government of India, and the Indian Environmental Society produced a blueprint declaration for EE in the developing world (Bandhu and Berberet 1987, pp. xii-xv). This conference followed on the heels of a 1984 ISEE-North American Association for Environmental Education (NAEE)-Australian Association for Environmental Education (AAEE) workshop in Lake Louise, Alberta, that called for a global EE strategy patterned after the World Conservation Strategy released in 1980 by the International Union for the Conservation of Nature and Natural Resources (IUCN). The Lake Louise workshop also called for establishment of a global EE fund to finance international EE programs (Berberet and Sacks 1986, p. 43).

In many ways the efforts of the past few years will culminate in the Moscow Congress on Environmental Education and Training upcoming in the Soviet Union in August 1987. Billed as a "Tbilisi Plus 10" gathering, the Moscow congress will review EE progress since 1977 in light of the original Tbilisi recommendations and seek to plot regional and global strategies for the future. One dimension of North American regional preparation for Moscow occurred last September when NAEE and ISEE collaborated on an EE decade-assessment workshop in Eugene, Oregon.

As commendable as the EE community's recent attempts are, to paraphrase Rene Dubos, to "think globally and act locally," (1980, p. 156) its success will be significantly affected by the ability of environmental educators to emphasize content as well as process, to create linkages with the scholarly and educational mainstream, and to incorporate human culture as well as natural systems in its analyses. The cultural

realm has changed significantly since the late 1960s-early 1970s period, rendering the EE ideological perspective an even more simplistic and distorted view of reality than it was at the time of the first Earth Day.

A failure to grasp current local-to-global cultural realities would perpetuate a faulty intellectual basis for environmental education in the future. Although disagreement exists about whether the world has entered a post-industrial information age or simply a new stage of industrialization, the information and service sectors of the economy have grown tremendously at the expense of jobs and profits in manufacturing and agriculture. Mechanical technologies of the smokestack industrial era are becoming outmoded and noncompetitive and are either being refined or replaced by sophisticated electronic technologies that do more and cost less. Paul Hawken, author of *The Next Economy* (1983, p. 106), describes the transition in this way: "The informative economy will not replace the mass [industrial] economy; it will absorb and include the mass economy in the course of its evolution. We will need steel, rubber, airplanes, pulp mills, and trucks for centuries."

Events of the 1970s accelerated this economic transformation, in the process laying groundwork for present global economic and environmental conditions. Within this global context relations between the so-called highly developed first world and the developing third world illustrate a series of cultural, ethical, and environmental dilemmas. The great industrial era in the developed world was built on cheap and plentiful fossil fuel energy, primarily oil. This era came to an end in 1973 with the Arab oil embargo and the ten-fold increase in the price of oil that soon followed. The developed world had little choice but to accelerate technological innovations in an effort to use less energy per unit of production. This occurred primarily in the form of rapid developments in computers, robotics, and biotechnology and in the application of energy conservation measures. The economic shift took place so quickly that by the late 1970s energy demand curves began to flatten. This, in turn, produced a leveling off, then a fall, in world oil prices. Soon, oil-producing countries, almost all from the developing world, experienced debt crises as declining oil revenues failed to provide sufficient capital to service large loans extended primarily by western banks during boom times to finance development.

Somewhat oversimplified, present global reality includes a highly developed world at various stages in the evolution of information and service economies and a developing world with high economic aspirations that is forced to place increasing economic pressures on the environment to generate revenues for debt payments. Development pressures, exacerbated by rapid population growth, threaten not only to overwhelm the natural environment through deforestation, desertification, soil salinization, and waste generation, but to undermine the cultural stability necessary to create and maintain the social and political infrastructure that is basic to a society's successful development.

Yet a technological revolution that implies lower energy and resource consumption while reducing the volume of waste byproducts has to be welcome news for an environmentally stressed planet Earth. Likewise, the analytical, communicative, and productive capabilities of the new technologies would seem to have substantial potential for educational, social, economic, political, and cultural development. Never has the technological tool chest seemed to contain more tools to benefit humankind. Although it is true that production of computer chips releases some toxic wastes to the environment and has some negative effects on worker health, such problems seem to be manageable. Much more toxic are the mountains of petrochemical wastes generated by the plastic throwaway society that originated in the industrial era.

Still, the information age, at least in the short term, has foreboding implications, especially for the developing world. In the global economy of the information age, developing world economies may be seriously disadvantaged in competing with the electronic technologies of the developed world, technologies that are more efficient in production. Gaining technological efficiency in ways that maximize inputs of human labor and scarce development capital while minimizing adverse environmental impacts is an information-age necessity. To compete successfully in global markets, third world development must minimize the energy and resource inefficiencies and environmental excesses of industrial-era practices while maintaining sufficient cultural stability to avoid political and social disintegration. The latter is a tale of woe that has plagued the developing world since former European colonies became independent states after World War II.

Inadequate attention has been given to the importance of continuity when a traditional culture modernizes. The values, mores, and institutions of a traditional society -- family, proximity to land, emphasis upon community, religious values -- can represent critical sources of stability in the wake of modernizaton pressures. If the pace of economic development is too rapid and focused exclusively on the goal of improving material standards of living at the expense of nonmaterial dimensions of quality of life, a void may be created, jeopardizing the social cohesion provided by the traditional culture. Economic development may seem a hollow achievement, indeed, if such a void is filled by social disorder, authoritarian politics, and cultural anomie.

Development is a complex cultural phenomenon. Many of the values, customs, and institutions of traditional culture represent infrastructure building blocks to support and manage an evolving society. In making the transition from traditional to modern status, most nations probably cannot simply leapfrog the industrial era and enter the information age. And given the variances among national cultures, for developing nations to follow mindlessly the development paths of industrial societies, especially those of highly developed nations whose cultural traditions may be quite different from their own, would seem to be folly. The scholar who focuses exclusively on physical and biological conditions and ignores within a historical context sociocultural differences, political power and global economic relationships, and the rudiments of current interactions between energy, resources, waste, technology, and environment may contribute to such folly.

Application of information-age technological innovations is probably imperative in the economic development and environmental amelioration of the developing world. Whether it be the introduction of new, disease-resistant plants, the reforestation of eroded slopes, the restoration of salinized soils, the development of culturally compatible birth control methods, the mass communication of culturally and ecologically compatible development education, or the harnessing of information-age technological efficiences, it would seem that a wise scenario for the future acknowledges information-age realities and makes applications on a scale appropriate to unique cultural and environmental circumstances.

To grapple intellectually with this changing world, environmental educators must dedicate themselves to critical inquiry, scientific analysis, and humanistic interpretation. A gold mine of theoretical insights awaits in the work of scholars in the humanities, social sciences, and natural sciences. Human ecologists have begun recently to develop approaches such as the biohistorical, a linking of the study of biology and culture within the dimension of historical time; the biosophical, a linking of biology, sociology, and philosophy in order to make environmental and societal assessments useful in community planning; and the biopsychic, a connecting of biology and psychology to focus on human motivation in shaping environmental behavior. Another emerging approach is the bioregional, an integration of biology and the social sciences to explore possibilities for developing decentralized regional economic and political communities that are ecologically compatible.

Within the humanities a cross-disciplinary field has emerged known as heritage studies. Heritage studies primarily involve examination of the myths, legends, folklore, and literature of a culture for evidence of themes, plots, and characters embodying positive environmental values and philosophies and habits of harmony and stewardship. Whether stories of the Lorax, Wordsworth's pantheism, or Hindu animism, these reinforcing images are emphasized in educational efforts, often focusing on children, to place the cultural tradition on the side of environmental protection. Emphasizing the natural history of wildlife, telling and retelling folklore and legends depicting animals, birds, and plants in significant ecocultural roles, and celebrating true heroism, such as the Greenpeace struggle to save the whales, are important dimensions of environmental education.

Environmental psychologists Irwin Altman and Martin Chemers (1980) suggest the utility of a dialectic approach, an analysis of the interplay of oppositional forces in understanding ecological processes of growth, change, and evolution that occur constantly. The dialectic approach does not assume the existence of an ideal ecological state but rather that ecological variables interact within the framework of opposite poles, one pole or the other being stronger at different times or in different settings. Examples of such

oppositional forces include scarcity/abundance, homogeneity/diversity, continuity/change, openness/closedness, individual/community, public/private, order/disorder, development/preservation, and centralization/decentralization. Each set of forces possesses a unity of meaning, a continuous focus on "both sides of the coin" that helps to maintain a holistic perspective.

In many areas, electronic technologies are pioneering dramatic knowledge breakthroughs. Satellite mapping and computer modeling and graphics techniques make possible simulation of the interaction of countless cultural and environmental variables, a methodology behind the proposed Wisconsin Land Information Program. Electronic assessment techniques have produced convincing evidence of source points of acid precipitation in the Midwest, discovered the hole in the ozone layer over Antarctica, and detected in homes alarming levels of radon gas radioactivity, a potent cause of lung cancer.

The challenge for environmental educators in the future is to get on the cutting edge of the scholarly and educational mainstream. In the process, EE must relate more effectively to people of diverse cultures in North America and abroad and address issues of hunger, social justice, and civil rights as well as environmental quality. A legitimate fear about the information age is that it will increase wealth and knowledge gaps between rich and poor people, schools, and nations. A fundamental re-examination of pre- and inservice teacher education programs is occurring in North America, but environmental educators have been silent on this crucial topic to date. Entering the mainstream means that EE becomes a part of the preparatory curriculum of all teachers and that ecocultural perspectives are infused in all disciplines. Likewise, greatly increased collaboration must occur between the formal and nonformal sectors so that school and citizen EE will develop the capability to influence decisionmakers. In the final analysis, this is what Earth Day 1970 was all about.

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